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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/714,491

11/14/2003

Masahiro Yatake

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09/13/2006

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EXAMINER

SHOSHO, CALLIE E

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 09/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/714,491

Applicant(s)

YATAKE, MASAHIRO

Examiner

Callie E. Shosho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/29/06 has been entered.

Claim Objections

2. Claim 3 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 3, which depends on claim 1, recites “wherein the combined amount of the methylisothiazolone and the octylisothiazolone is no more than 1000 ppm” while claim 1 recites that “the combined amount of the methylisothiazolone and the octylisothiazolone is at least 110 ppm and no more than 1300 ppm”. Thus, claim 3 fails to further limit the scope of the claim on which it depends, namely claim 1, given that claim 3 is broader than claim 1. That is, while claim 1 requires that the combined amount of methylisothiazolone and the octylisothiazolone is “at least 110 ppm”, claim 3 requires that the combined amount is no more than 1000 ppm, i.e. 0-1000 ppm, which includes amounts less than 110 ppm which is outside the scope of claim 1.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 has been amended to recite “provided that the methylisothiazolone content can be up to 800 ppm if the octylisothiazolone content is 200 ppm or less”. It is the examiner’s position that this phrase fails to satisfy the written description requirement under the cited statute since there does not appear to be a written description requirement of the cited phrase in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163.

As support for the above amendment, applicant point to the tables found in the present specification. However, while Table 3 discloses example that utilizes 800 ppm methylisothiazolone and 200 ppm octylisothiazolone, this does not provide support to broadly recite that the methylisothiazolone content can be up to 800 ppm if the octylisothiazolone content is 200 ppm or less given that such recitation includes combinations of methylisothiazolone and octylisothiazolone for which there is no support in the specification as originally filed. That is, while there is support in the present specification to recite ink comprising one specific

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combination of methylisothiazolone and octylisothiazolone, i.e. 800 ppm methylisothiazolone and 200 ppm octylisothiazolone, there is no support to recite the use of up to 800 ppm methylisothiazolone if the octylisothiazolone content is 200 ppm or less which includes the use of methylisothiazolone in amounts of 600 ppm, 700 ppm, 750 ppm, etc and octylisothiazolone in amounts of 200 ppm, 150 ppm, 100 ppm, etc. for which there is no support in the specification as originally filed.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-4, 6-8, and 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable

over WO 2001/44384 in view of EP 676140.

WO 2001/44384¹ discloses ink jet ink comprising water, 3-10% microencapsulated pigment comprising pigment coated with carboxyl group containing polymer, 0.1-10% resin emulsion, 5-15% polyhydric alcohol, 0.01-10% acetylene glycol, 1,2-alkyl diol, and 1-10% humectant such as 1,4-butanediol or 1,6-hexanediol (col.19, lines 4-8, 43-45, 53-55, and 61-62, col.20, lines 10-13, col.23, lines 4-5, col.34, lines 5-19, 26-27, 50-51, 58-60, col.35, lines 27-60, col.37, lines 47-52, col.40, lines 12-16, and col.41, lines 15-33).

The difference between WO 2001/44384 and the present claimed invention is the requirement in the claims of methylisothiazolone and octylisothiazolone.

EP 676140 discloses using 1-400 ppm of blend of methylisothiazolone and octylisothiazolone wherein the ratio of methylisothiazolone (MIT) to octylisothiazolone (OIT) is 1/20 to 20/1 for improved control against fungi and bacteria (page 2, lines 12-19 and 38-40). Further, attention is drawn to Table 5, page 8 of EP 676140 that discloses the use of 16 ppm MIT and 125 ppm OIT, 31 ppm MIT and 125 ppm OIT, and 16 ppm MIT and 250 ppm OIT.

In light of the motivation for using methylisothiazolone and octylisothiazolone disclosed by EP 676140 as described above, it therefore would have been obvious to one of ordinary skill in the art to use methylisothiazolone and octylisothiazolone in ink of WO 2001/44384 in order to have improved control of fungi and bacteria, and thereby arrive at the claimed invention.

¹ It is noted that when utilizing WO 2001/44384 in the above paragraph, the disclosures of the reference are based on Miyabayashi et al. (U.S. 6,602,333) which is an English language equivalent of the reference. Therefore, the column and line numbers cited with respect to WO 2001/44384 are found in Miyabayashi et al.

8. Claims 5 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 2001/44384 in view of EP 676140 as applied to claims 1-4, 6-8, and 12-20 above, and further in view of either Kurabayashi et al. (U.S. 6,367,921) or Tabayashi et al. (U.S. 6,074,467).

The difference between WO 2001/44384 in view of EP 676140 and the present claimed invention is the requirement in the claims of pH of the ink.

Kurabayashi et al., which is drawn to ink jet ink, disclose ink jet ink possessing pH of 7-10 in order to produce ink with excellent long term stability which provides durability for ink jet printer (col.10, lines 8-15).

Alternatively, Tabayashi et al., which is drawn to ink jet ink, disclose ink jet ink possessing pH of 7.5-9 in order to produce ink with good dispersion stability that does not clog printer and provides substrate with good coating (col.8, lines 29-39)

In light of the motivation for using ink with specific pH disclosed by Kurabayashi et al. or Tabayashi et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to control the pH of the ink of WO 2001/44384 to 7-10 or 7.5-9 in order to produce ink with excellent long term stability that provides durability for ink jet printer, or alternatively, to produce ink with good dispersion stability that does not clog printer and provides substrate with good coating, and thereby arrive at the claimed invention.

9. Claims 1-3, 5-10, 12-13, 15-16, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 2000/75245 in view of WO 2001/44384 and EP 676140.

WO 2000/75245² discloses ink jet ink comprising water, surface-treated pigment, penetrating agent such as acetylene glycol, acetylene alcohol, 1,2-alkylene diol, and glycol ether, polyhydric alcohol, i.e. humectant, in amount of, for instance, 10%, and 0.01-0.5% methylisothiazolone and octylisothiazolone (col.12, lines 8-26, col.13, lines 31-35, 50-52, and 60-62, col.15, lines 15-20 and 45-48, col.29, lines 23-35).

The difference between WO 2000/75245 and the present claimed invention is the requirement in the claims of (a) specific amounts of methylisothiazolone and octylisothiazolone, (b) specific colorant, and (c) macromolecular fine particles.

With respect to difference (a), while WO 2000/75245 discloses the use of 0.01-0.5% methylisothiazolone and octylisothiazolone, there is no disclosure of the specific amounts of each of the methylisothiazolone and octylisothiazolone.

EP 676140 discloses using 1-400 ppm of blend of methylisothiazolone and octylisothiazolone wherein the ratio of methylisothiazolone (MIT) to octylisothiazolone (OIT) is 1/20 to 20/1 for improved control against fungi and bacteria (page 2, lines 12-19 and 38-40). Further, attention is drawn to Table 5, page 8 of EP 676140 that discloses the use of 16 ppm MIT and 125 ppm OIT, 31 ppm MIT and 125 ppm OIT, and 16 ppm MIT and 250 ppm OIT.

With respect to difference (b), WO 2001/44384, which is drawn to ink jet inks, disclose the use of microencapsulated pigment, i.e. pigment coated with polymer including carboxyl containing polymer. The motivation for using such colorant is that it possesses high dispersion

² It is noted that when utilizing WO 2000/75245 in the above paragraph, the disclosures of the reference are based on Komatsu et al. (U.S. 6,802,893) which is an English language equivalent of the reference. Therefore, the column and line numbers cited with respect to WO 2000/75245 are found in Komatsu et al.

stability. WO 2001/44384 also discloses the equivalence and interchangeability of using self-dispersing or surface treated pigment, as disclosed by WO 2000/75245, with microencapsulated pigment as presently claimed (col.19, lines 4-8, 43-45, 53-55, and 61-62, col.20, lines 10-13, and col.23, lines 45).

In light of the motivation for using methylisothiazolone and octylisothiazolone in specific amounts disclosed by EP 676140 as described above and for using microencapsulated pigment disclosed by WO 2001/44384 as described above, it therefore would have been obvious to one of ordinary skill in the art to use such methylisothiazolone and octylisothiazolone and microencapsulated pigment in the ink of WO 2000/75245 in order to have improved control of fungi and bacteria and to produce ink with high dispersion stability, and thereby arrive at the claimed invention.

With respect to difference (c), WO 2001/44384 discloses the use of macromolecular fine particles, i.e. resin emulsion, in order to produce image with excellent scratch resistance and water resistance (co.37, line 47-col.38, line 16).

In light of the motivation for using macromolecular fine particles disclosed by WO 2001/44384 as described above, it therefore would have been obvious to one of ordinary skill in the art to use such macromolecular fine particles in the ink of WO 2000/75245 in order to produce image with excellent scratch resistance and water resistance, and thereby arrive at the claimed invention.

Response to Arguments

10. Applicant's arguments filed 6/29/06 have been fully considered but they are not persuasive.

Specifically, applicants argue that EP 676140 is not a relevant reference against the present claims given that while EP 676140 discloses blend of 1-400 ppm methylisothiazolone (MIT) and octylisothiazolone (OIT) with ratios between MIT and OIT of (most preferably) 1:10 to 10:1, one of ordinary skill in the art would have to pick and choose from amongst huge number of possibilities to arrive at the presently claimed combined amount of MIT and OIT with the respective amounts of MIT and OIT also being within the presently claimed ranges. Applicants argue that EP 676140 does not disclose criticality with respect to the presently claimed range of MIT and OIT.

However, attention is drawn to Table 5, page 8 of EP 676140 that discloses the use of combinations of 16 ppm MIT and 125 ppm OIT, 31 ppm MIT and 125 ppm OIT, and 16 ppm MIT and 250 ppm OIT wherein both the combined amount of MIT and OIT and the respective amounts of MIT and OIT fall within the presently claimed ranges. Thus, EP 676140 clearly discloses combination of MIT and OIT as presently claimed.

With respect to the comparative data set forth in Table 3 of the present specification, it is noted that while the data establishes the criticality of using MIT and OIT in combined amount and respective amounts as presently claimed, it is the examiner's position that the data is not persuasive in overcoming the closest prior art, namely, WO 2001/44384 in view of EP 676140 and WO 2000/75245 in view of WO 2001/44384 and EP 676140 given that EP 676140 already discloses the criticality of using combination of MIT and OIT in amounts as presently claimed.

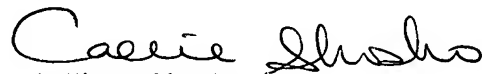
Further, with respect to the comparative data set forth in Table 4 of the present specification, it is noted that the data compares ink within the scope of the present claims, i.e. comprising encapsulated pigment, with ink outside the scope of the present claims but within the scope of WO 2000/75245, i.e. comprising surface treated pigment. It is shown that ink of the present invention is more sensitive to the effects of MIT and OIT. However, there is not proper side-by-side comparison between the inventive inks and the comparative ink given that the inventive ink comprises macromolecular fine particle solution while the comparative ink does not. Thus, it is not clear if the differences between the inventive inks and the comparative inks are due to the encapsulated pigment or due to the presence of the macromolecular fine particle solution.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Callie E. Shosho
Primary Examiner
Art Unit 1714

CS

9/8/06